WHAT IS CLAIMED IS:

1. A fastener installation tool, comprising:

a tool head;

a socket mounted on said tool head for receiving and supporting a threaded nut;

drive means for rotatably driving said socket to install the nut onto a threaded fastener;

a fixture pin mounted on said tool head generally coaxially within said socket, said fixture pin having a tip end for engaging and retaining a threaded fastener to substantially prevent fastener rotation during thread-on installation of a nut;

said fixture pin being axially movable relative to said socket, and said socket being rotatable relative to said fixture pin; and

a clutch assembly for rotatably supporting said fixture pin within said socket to permit fixture pin rotation in response to a torque load applied thereto in excess of a predetermined limit, whereby said clutch assembly safeguards said fixture pin against breakage in response to a torque load applied thereto;

said clutch assembly including a cam wheel carried by said fixture pin and defining a plurality of generally radially outwardly open cam seats;

said clutch assembly further including a multi-function spring member having a primary spring element applying an axially directed first spring force urging said fixture pin in a forward direction toward the fastener, and a secondary spring element applying a radially directed second spring force urging a cam pin carried thereby into normal seated engagement with one of said radially outwardly open cam seats defined by said cam wheel.

2. The fastener installation tool of claim 1 wherein said fixture pin in removably slide-fit mounted within a bore formed in said socket.

3. The fastener installation tool of claim 1 wherein said multi-function spring element comprises a unitary component.

4. The fastener installation tool of claim 1 further including means for selectively adjusting said second spring force.

5. The fastener installation tool of claim 1 wherein said primary spring element comprises a leaf spring engaging a rear end of said fixture pin, and further wherein said secondary spring element comprises a cantilevered spring leg carried by said primary spring element, said cantilevered spring leg having a distal end defining said cam pin.

6. The fastener installation tool of claim 5 wherein said leaf spring has a base end connected to said tool head, and a cantilevered spring leg disposed in rearwardly spaced and cantilevered relation to a rear side of said tool head, said spring leg including a distal end thereof for springably engaging a rear end of said fixture pin.

7. The fastener installation tool of claim 6 wherein said distal end of said spring leg has an elongated slot formed therein for slidably receiving a rearwardly projecting tab carried by said fixture pin.

8. The fastener installation tool of claim 5 further including means for selectively adjusting said second spring force.

9. The fastener installation tool of claim 5 further including a relatively stiff bracket plate adjustably mounted along the length of said cantilevered spring leg for selectively adjusting said second spring force.

10. The fastener installation tool of claim 9 wherein said bracket plate has an elongated slot formed therein, and further including a fastener

passed through said slot for adjustably mounting said bracket plate along the length of said cantilevered spring leg.

11. The fastener installation tool of claim 1 wherein said tip end of said fixture pin has a noncircular cross sectional shape.

12. The fastener installation tool of claim 1 wherein said primary spring element comprises a first cantilever spring mounted on said tool head, and wherein said secondary spring element comprises a second cantilever spring carried by said first cantilever spring.

13. The fastener installation tool of claim 12 wherein said first and second cantilever springs are formed with a unitary construction.

14. The fastener installation tool of claim 1 wherein said primary spring element a slotted base end, and further including a fastener passed through said slotted base end for mounting said primary spring element onto said tool head, said slotted base end permitting lateral displacement of said primary spring element without detachment from said tool head for facilitated access to a rear end of said fixture pin.

15. In a fastener installation tool having a socket for receiving and supporting a threaded nut, drive means for rotatably driving the socket for installing the nut onto a threaded fastener, a fixture pin disposed generally coaxially within and axially movable with the socket for engaging and supporting the threaded fastener against rotation during drive installation of the nut onto the fastener, and a clutch assembly rotatably supporting the fixture pin within the socket to permit fixture pin rotation in response to a torque load applied to the fixture pin in excess of a predetermined limit, whereby the clutch assembly safeguards the fixture pin against breakage in response to a torque load applied thereto, the improvement comprising:

a cam wheel carried by said fixture pin and defining a plurality of generally radially outwardly open cam seats; and

said clutch assembly including a multi-function spring member having a primary spring element applying an axially directed first spring force urging said fixture pin in a forward direction toward the fastener, and a secondary spring element applying a radially directed second spring force urging a cam pin carried thereby into normal seated engagement with one of said radially outwardly open cam seats defined by said cam wheel.

16. The fastener installation tool of claim 15 further including means for selectively adjusting said second spring force.

17. The fastener installation tool of claim 15 wherein said primary spring element comprises a leaf spring engaging a rear end of said fixture pin, and further wherein said secondary spring element comprises a cantilevered spring leg carried by said primary spring element, said cantilevered spring leg having a distal end defining said cam pin.

18. A fastener installation tool, comprising:

a tool head;

a socket mounted on said tool head for receiving and supporting a threaded nut;

drive means for rotatably driving said socket to install the nut onto a threaded fastener;

a fixture pin mounted on said tool head generally coaxially within said socket, said fixture pin having a tip end for engaging and retaining a threaded fastener to substantially prevent fastener rotation during thread-on installation of a nut;

said fixture pin being axially movable relative to said socket, and said socket being rotatable relative to said fixture pin; and

a clutch assembly for rotatably supporting said fixture pin within said socket to permit fixture pin rotation in response to a torque load applied

thereto in excess of a predetermined limit, whereby said clutch assembly safeguards said fixture pin against breakage in response to a torque load applied thereto;

said clutch assembly including a cam wheel carried by said fixture pin and defining a plurality of generally radially outwardly open cam seats;

said clutch assembly further including a multi-function spring member having a leaf spring engaging a rear end of said fixture pin for applying an axially directed first spring force urging said fixture pin in a forward direction toward the fastener, and a cantilever spring carried by said leaf spring and including a cam pin at a distal end thereof, said cantilever spring applying a radially directed second spring force urging a cam pin carried thereby into normal seated engagement with one of said radially outwardly open cam seats defined by said cam wheel.

19. The fastener installation tool of claim 18 wherein said multi-function spring element comprises a unitary component.

20. The fastener installation tool of claim 18 further including a relatively stiff bracket plate adjustably mounted along the length of said cantilevered spring leg for selectively adjusting said second spring force.